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ASN: XEHB-6-03-09

DESCRIPTION: **Combined Modification Document -**
Modification Note 72
TCTO 31P1-4-108-614
EEM 6345.1 CHG 46, Chap 42
DoD Dedicated Circuit Relocations
and New Installs on the Radar Product
Generator

DATE OF ISSUE: October 27, 2003

QUANTITY OF ISSUE: EACH

DOD DEDICATED CIRCUIT RELOCATIONS AND NEW INSTALLS ON THE RADAR PRODUCT GENERATOR

DOPPLER METEOROLOGICAL RADAR
WSR-88D

PUBLISHED UNDER AUTHORITY OF THE SECRETARIES OF
COMMERCE, THE AIR FORCE, THE NAVY, AND TRANSPORTATION

FAA APPROVAL

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1.   **SUBJECT**

DoD Dedicated Circuit Relocations and New Installs on the Radar Product Generator (RPG).

2.   **PURPOSE**

This document provides instructions to relocate specific, and install new, dedicated DoD telecommunications circuits on the NEXRAD RPG demarc blocks. The circuit relocations reallocate X.25 serial ports as Point-to-Point Protocol (PPP) serial ports. This change is required to support conversion of the DoD radar display system called the Open Principal User Processor (OPUP) system from X.25 to PPP.

For the NWS configuration, up to five dedicated circuits will be relocated. For the DoD/ FAA configuration, up to four dedicated circuits will be relocated.

The need for this modification is driven by the OPUP deployment schedule. No hardware kit components are required for the RPG end. Prior to starting this modification, the majority of sites must complete both RPG Modification Note 65 and 71.

After the OPUP Spiral III deployment is complete, Modification Note 73 will be deployed to complete the RPG upgrade. Modification Note 73 will provide cables that convert the remaining two DoD dial ports from X.25 to PPP.   For the majority of RPGs, these two ports must remain X.25 for inter-operability with legacy DoD PUPs until OPUP deployment is completed. However, Lajes AB will actually receive Modification Note 73 as soon as the Lajes AB OPUP is installed. Camp Humphreys, Kadena AB, and Kunsan AB will be instructed to complete Modification Note 73 ahead of Mod Note 72 (out of sequence). Sterling should complete Modification Notes 65, 71, and 72 together.

NWS EHB 6-525, Revision 1, 30 April 2003 provides the documentation change for all four OPUP driven modifications (Modification Notes 65, 71, 72, and 73). The authority for these modifications is ECP 0158R2, ORPG PPP SERIAL HW FOR DoD.

For additional information concerning this document, contact the Radar Operations Center (ROC) Hotline, Norman, OK; phone number: (800) 643-3363 or (405) 366-2980 or by e-mail at NEXRAD.Hotline@noaa.gov. An electronic copy of this document can be found at the following internet address: www.roc.noaa.gov/ssb/sysdoc/techman/tmlinks.asp

3.   **SITES AFFECTED**

See ATTACHMENT 5.

4.   ESTIMATED COMPLETION DATE

This modification must be reported completed no later than 60 days after receipt of this document.

5.   EQUIPMENT AFFECTED

Radar Product Generator Group.

6.   SPARES AFFECTED

Not applicable.

7.   MODIFICATION ACCOMPLISHED BY

Site electronics technicians will perform this modification. One technician is required to perform this action.

8.   MATERIAL REQUIRED

The following common tools/supplies may be required to complete the modification:
•   Pliers, miniature cutters
•   NEXRAD RPG Telecommunications Circuit Report (TCR) - Current
•   NEXRAD RPG Telecommunications Circuit Report (TCR) - Modification Note 72
•   ESD Wrist Strap
•   Eight Wire Modular Adapter Harris 10220-100 or equivalent
•   Impact Punch Tool, Jensen 23-814 or equivalent
•   Impact Punch Tool 66 Blade, Jensen 23-066 or equivalent

9.   SOURCE OF MATERIALS

Not applicable.

10.   SPECIAL TOOLS AND TEST EQUIPMENT REQUIRED

Transmission Line Test Set AM-48 (SERD 15)

11.   **TIME AND PERSONNEL REQUIRED**

Work Phases	Work-hours
Unpacking	0.0
Disassembly	0.0
Installation	0.5
Assembly	0.0
Operational Check	.25
Total Work-hours	0.75

12.   **DOCUMENTS AFFECTED**

Not applicable.

13.   **VERIFICATION STATEMENT**

This modification was successfully installed at the Radar Operations Center, OK.

14.   **DISPOSITION OF REMOVED AND REPLACED PARTS/MATERIALS**

Not applicable.

15.   **PROCEDURES**

All Sites: Complete ATTACHMENT 1 through ATTACHMENT 3 .

•   ATTACHMENT 1 - DOWNLOAD NEXRAD TELECOMMUNICATIONS CIRCUIT
      REPORTS.
•   ATTACHMENT 2 - VERIFY CONNECTION STATUS OF DOD DEDICATED
      CIRCUITS TO BE RELOCATED AND ADJUST CORRESPONDING MODEM TX
      LEVELS
•   ATTACHMENT 3 - RELOCATE SPECIFIC DOD OPUP DEDICATED USER
      CIRCUITS.

Sites with new OPUP user connections, complete ATTACHMENT 4.

•   ATTACHMENT 4 - INSTALL NEW DOD DEDICATED CIRCUITS AND ADJUST
      CORRESPONDING MODEM TX LEVEL.

16.   **FAA DISTRIBUTION**

This directive is distributed to selected offices and services within Washington headquarters, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, regional Airway Facilities divisions, and Airway Facilities field offices having the following facilities/equipment: NXRAD.

17.   **CHANGES TO TABLE OF CONTENTS (FAA)**

This chapter will be included in the next revision to the table of contents for FAA Order 6345.1, Electronic Equipment Modification Handbook - Next Generation Weather Radar (NEXRAD).

18.   **RECOMMENDATIONS FOR CHANGES (FAA)**

Forward any recommendations for changes to this directive through normal channels to the National Airway Systems Engineering Division, AOS-200, Operational Support.

19.   **REPORTING INSTRUCTIONS**

   a. NWS

Report completed modification on WS Form A-26, Engineering Management Reporting System Maintenance Record, according to the instructions in NWS Instruction (NWSI) 30-2104, Engineering Management Reporting System (EMRS), part 2 and Appendix E. Include the following information on the WS Form A-26:

   - An Equipment Code of RPG in Block 7.
   - The appropriate serial number in Block 8.
   - A Mod No. of 72 in Block 17a.

A sample EMRS report is provied as ATTACHMENT 7.

   b. DoD

Update the AFTO Form 95 to show TCTO compliance. Report TCTO compliance in accordance with TO 00-20-2, Table 3-10, Rule 9.

c. FAA

Enter this directive number, date, and chapter number on the appropriate FAA Form 6032-1, Airway Facilities Modification Record.

Use the Maintenance Management System (MMS) application Log Equipment Modification (LEM) function to report the completion of this modification. Verify N is in the REP COD field to ensure the log entry will be upward reportable to the national data base for access by AOS. This directive should be entered into the LEM fields as follows:

(1) FAC/SERV: NXRAD

(2) LOC/IDENT: 55 BA

(3) Short Name: SYS

(4) Order No.: 6345.1

(5) Chapter: 42

(6) Change: 46

d. DoD and FAA

Complete ATTACHMENT 6, and return the information to the ROC by one of the four methods below:

(1)	Mail Address:	Program Branch, Retrofit Management Team
		WSR-88D Radar Operations Center
		3200 Marshall Ave., Suite 101
		Norman, Oklahoma 73072-8028
(2)	Fax Number:	(405) 366-6553
		ATTN: Retrofit Management Team
(3)	E-mail Address:	NEXRAD.Logistics@noaa.gov
(4)	Web Version:	http://www.roc.noaa.gov/ssb/logistics/completion.asp

ATTACHMENT 1

DOWNLOAD NEXRAD TELECOMMUNICATIONS CIRCUIT REPORTS

Tools/Materials Required:

Networked PC/Workstation with:
- Internet connection
- Printer connection
- One of the following web browsers loaded on the PC/Workstation:
- Microsoft Internet Explorer Version 6.0 or later
- Netscape 4.79 or later

Initial Conditions:

- All Sites: Completed Modification Note 65 and 71
- Kadena AB, Camp Humphries, and Kunsan AB Only: Completed Modification Note 73

Purpose:

The purpose of this procedure is to remotely access NEXRAD RPG Telecommunications Circuit Reports (TCRs) from the ROC web server via the Internet. The TCRs are needed to complete the modem level adjustment and dedicated demarc panel rewiring procedures in ATTACHMENT 2 and ATTACHMENT 3. The reports are maintained on a secure web server at the NWS ROC. The reports are generated from the ROC's NEXRAD circuit database.

If you do not already have an account, contact the WSR-88D Hotline at (800) 643-3363 for your "Logon Name" and "Password" to access the secure ROC web site that hosts NEXRAD telecommunications data. Overseas DoD sites may also contact the Hotline via Tinker AFB DSN at (312) 884-1110 and offnet to 366-6580.

The Hotline Specialists will have an updated list of all personnel authorized to access the secure web page. Simply identify your name and organization to the hotline specialist. Request your logon name and password for access to the secure web page.

Procedure/Steps:

1. Use a PC or laptop with access to the Internet and either Netscape or Internet Explorer (preferred browser for this procedure) to access the ROC web server. Go to the following web page location: https://www.roc.noaa.gov/comms/. Do not obtain the TCRs more than a couple of days in advance of completing this modification for a given RPG site, because ROC may have incorporated updates that could be missed.

ATTACHMENT 1 (Continued)

DOWNLOAD NEXRAD TELECOMMUNICATIONS CIRCUIT REPORTS

2. If this is the first time to access this web site, then a New Site Certificate window will appear. Click the **Next** button in each subsequent certificate window. In the last certificate window, click on the **Finish** button. A new window will appear titled Certificate Name Check. Click on the **Continue** button in this and the subsequent Security Information window until the WSR-88D Comms Notebook Secure Login window appears. If this certificate is not expired, then the following dialog boxes appear. Click **OK** or **Yes** as appropriate until the WSR-88D Comms Notebook Secure Login window appears.
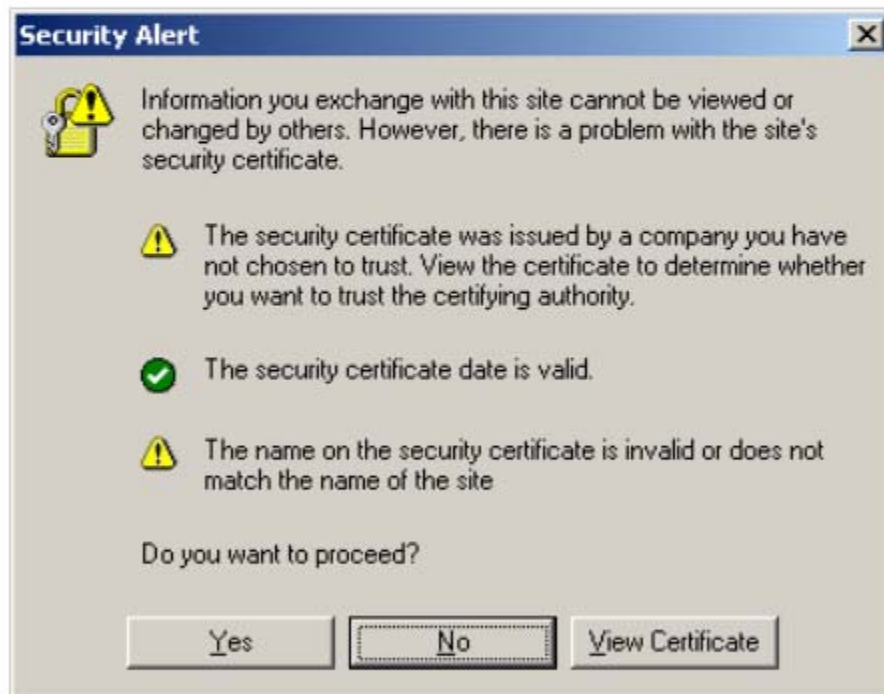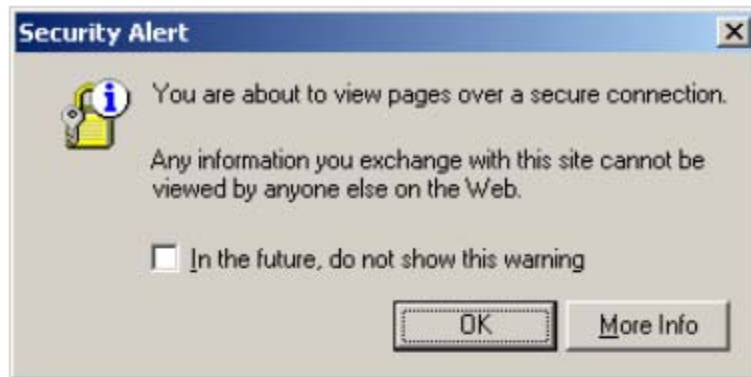
ATTACHMENT 1 (Continued)

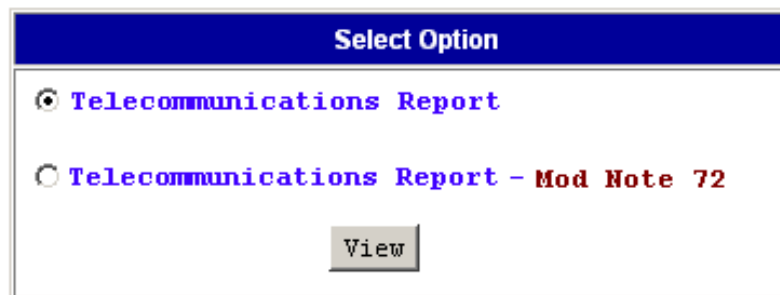**DOWNLOAD NEXRAD TELECOMMUNICATIONS CIRCUIT REPORTS**

3. Enter the site login name and password and then click on the Login button.

WSR-88D Comms Notebook Secure Login

USERNAME	
PASSWORD	
Login	

4. Upon login, the selection options should appear as shown below (where SITENAME is the name of your WSR-88D radar, e.g. VANCE AFB (AFWA), SAN JUAN (FAA), or LITTLE ROCK (NWS), for example). If so, proceed to step 5.   Do not proceed, if the option for Modification Note 71 instead of Modification Note 72 appears. This means that the comms database interface to the web does not yet reflect your site's completion of Modification Note 71. Notify the Hotline that Modification Note 71 is completed and the web site will be updated accordingly. Repeat from 1, after the web site has been updated.

WSR-88D Communication Documentation Notebook for SITENAME

Select Option

⦿ Telecommunications Report

◯ Telecommunications Report – Mod Note 72

View

5. In the Select Options area of this window, click on the Telecommunications Report button to select the current Telecommunications Circuit Report (TCR). Then click on the View button, and the web browser will advance to the selected TCR. Proceed to step 6 to print using Internet Explorer or step 7 to print using Netscape.

ATTACHMENT 1 (Continued)

DOWNLOAD NEXRAD TELECOMMUNICATIONS CIRCUIT REPORTS

6. To print the TCR using Internet Explorer, first setup for Landscape print format as indicated below. Select **File**, then select the **Page Setup** item from the main menu drop down list. The `Page Setup` dialog box will appear on the screen. In the `Orientation` dialog box, select the **Landscape** button under the dialog box area titled Orientation. Select the **OK** button to close the dialog box and save the orientation setting. Then, select **Print** from the File menu and proceed to step 8.
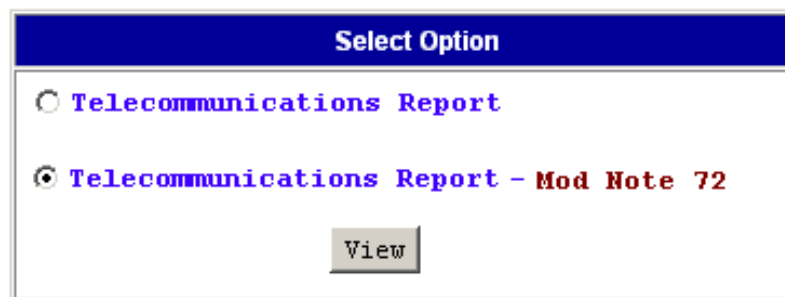
ATTACHMENT 1 (Continued)

DOWNLOAD NEXRAD TELECOMMUNICATIONS CIRCUIT REPORTS

7. To print using Netscape, Select **File** and then select **Print** from the File menu. Click on the **Properties** dialog box, find the page `Orientation` section and select **Landscape** as indicated below. Click **OK** to save the change and then click **OK** in the Print dialog window to print the file.

8. Repeat step 4, except click on the **Telecommunications Report - Mod Note 72** in the `Select Options` area of this window as shown below:

ATTACHMENT 2

VERIFY CONNECTION STATUS OF DOD DEDICATED CIRCUITS TO BE RELOCATED AND ADJUST CORRESPONDING MODEM TX LEVELS

Tools/Materials Required:

> Current TCR and TCR for Modification Note 72

Initial Conditions:

- Completed ATTACHMENT 1
- All RPGPCA components installed, equipment powered on, and RPG operational
- Technician is logged into the RPG workstation as a user and RPG HCI is running
- For All sites, except Sterling: Completed Modification Note 65
- Sterling: Modification Note 65 and this attachment should be worked together.

Purpose:

> The purpose of this procedure is to verify operation of each DoD dedicated user connection before it will be relocated per ATTACHMENT 3. Also, transmit levels for the modem(s) located in slots UD70/170A14 A17 through A20 (and A21 for NWS only) will be adjusted to match the level of the corresponding former X.25 modem in slots UD70/170A14 A6 through A16. This procedure does not apply to new DOD OPUP user connections. Refer to ATTACHMENT 4 for procedures on new OPUP circuit connection and modem transmit level configuration.

Procedure/Steps:

1. For Sterling Only: Proceed to step 5 of this attachment.

2. Compare the two TCRs (current and Modification Note 72) to identify DoD circuits that will be relocated to Dedicated RPG Block 4-RJ2DX (TB4) as shown on the Modification Note 72 TCR. Identify circuits by matching the end user name and corresponding circuit numbers between the current and Modification Note 72 versions of the TCR. One or more end user circuits to be relocated may be referred to as PUPs on the current TCR. After relocation, these end users (as shown on the Modification Note 72 TCR) will be referred to as OPUPs. This means the WSR-88D PUP at that end user's location is being replaced by an OPUP. Note both the position of the modem and the corresponding position of the 4-wire circuit on the terminal block for each one that will be relocated. Mark on the TCRs in a manner that facilitates tracking, e.g., highlighting each circuit to be relocated with a different color marker.

3. For All Sites: On the current TCR, record the transmit level (Tx level) for each dedicated modem, which corresponds to a circuit that was marked for relocation in step 2. To determine the Tx level, perform steps 3a through 3c for each modem.

ATTACHMENT 2 (Continued)

VERIFY CONNECTION STATUS OF DOD DEDICATED CIRCUITS TO BE RELOCATED AND ADJUST CORRESPONDING MODEM TX LEVELS

a. Press the modem **<RETURN>** key twice to display `Data 14.4 T/D?` or `V.32b 14.4 T/D?` (depending on the model of the modem) and Liquid Crystal Display (LCD) window.

b. Press the **<ACROSS>** key twice (three times for a 33.6 modem SDC modem, e.g. part number PC42703) until the LCD shows either `PhaseJitter=x dg` or `Rx Level = x dbm`.

c. Press the **<DOWN>** key until the LCD shows `Tx Level = x dBm`. Record the value of X on the current TCR next to the corresponding end user's modem for each circuit to be relocated. The range of values for x is 0 to -15.

4. Transfer the transmit levels (Tx level) that were recorded in step 2 from the current TCR to the new location of the respective end user's modem indicated on the Modification Note 72 TCR. Perform steps 4a through 4i for each modem affected in slots UD70/170A14 A17 through A20 (and A21 for NWS only).

a. Press the modem **<RETURN>** key twice to display `Ranging T/D?` or `Line Probing` (depending on the model of the modem) and Liquid Crystal Display (LCD) window.

b. Press the **<DOWN>** key until the LCD shows `TELCO OPT'S`.

c. Press the **<ACROSS>** key until the LCD shows `LL Tx Level = Y`. If the value of Y matched the value recorded on the Modification Note 72 TCR for this particular modem, proceed to step 4f.

ATTACHMENT 2 (Continued)

VERIFY CONNECTION STATUS OF DOD DEDICATED CIRCUITS TO BE RELOCATED AND ADJUST CORRESPONDING MODEM TX LEVELS

d. Press the **<DOWN>** key until the LCD shows `TX Level : X`, where X matches the value recorded on the Modification Note 72 TCR for this particular modem.

e. Press the **<ENTER>** key and the LCD shows `TX Level = X`.

f. Press the **<RETURN>** key twice.

g. Press the **<ACROSS>** key until `Save Changes=3` (or `Save Changes=4` for 33.6 SCD modems, part number PC42703).

h. Press the **<ENTER>** key once and the LCD reads `Save Completed!`

i. Press the **<RETURN>** key twice to return to the main LCD display.

5. For Sterling, record the transmit levels for each modem in slots UD70A14 A17 through A20 on the current TCR. Wait for coordination from the ROC OPUP deployment manager. Perform Modification Note 65 on the agreed upon date(s) to support the OPUP TCP deployment transition.

NOTE

NWS Modification Note 65, DoD AFTO 31P1-4-108-607, and FAA EEM 6345.1 CHG 38, Chap 35, must be completed prior to performing the following step.

6. For Sterling, perform steps 6a. through 6i. for each modem in slots UD70A14 A17 through A20.

ATTACHMENT 2 (Continued)

VERIFY CONNECTION STATUS OF DOD DEDICATED CIRCUITS TO BE RELOCATED AND ADJUST CORRESPONDING MODEM TX LEVELS

a. Press the modem **<RETURN>** key twice to display `Ranging T/D?` or `Line Probing` (depending on the model of the modem) and Liquid Crystal Display (LCD) window.

b. Press the **<DOWN>** key until the LCD shows `TELCO OPT'S`.

c. Press the **<ACROSS>** key until the LCD shows `LL Tx Level = Y`. If the value of Y matches the value recorded on the current TCR in step 5 for this particular modem, proceed to step 6f.

d. Press the **<DOWN>** key until the LCD shows `TX Level : X`, where X matches the value recorded on the current TCR in step 5 for this particular modem.

e. Press the **<ENTER>** key and the LCD shows `TX Level = X`.

f. Press the **<RETURN>** key twice.

g. Press the **<ACROSS>** key until `Save Changes=3` (or `Save Changes=4` for 33.6 SCD modems, part number PC42703).

h. Press the **<ENTER>** key once and the LCD reads `Save Completed!`

ATTACHMENT 2 (Continued)

VERIFY CONNECTION STATUS OF DOD DEDICATED CIRCUITS TO BE RELOCATED AND ADJUST CORRESPONDING MODEM TX LEVELS

i.   Press the **<RETURN>** key twice to return to the main LCD display.

ATTACHMENT 3

RELOCATE SPECIFIC DOD OPUP DEDICATED USER CIRCUITS

Tools/Materials Required:

> Transmission Line Test Set AM-48 (SERD 15)
> Eight Wire Modular Adapter Harris 10220-100 or equivalent
> Impact Punch Tool, Jensen 23-814 or equivalent
> Impact Punch Tool 66 Blade, Jensen 23-066 or equivalent
> TCRs obtained per ATTACHMENT 1 and marked per ATTACHMENT 2

Initial Conditions:

- All RPGPCA components installed, equipment powered on
- RPG operational with Software Build 4.0 or later
- Technician is logged into the RPG workstation as a user and RPG HCI is running
- RPG is clear of RPG alarms
- All Sites: Completed ATTACHMENT 2, as applicable. Completed all of Modification Note 65 (e.g. installed Cisco cables and configured modems for asynchronous PPP operation).
- All Sites: Proceed only after contacted by either the WSR-88D Hotline or a ROC OPUP deployment manager and an exact date has been coordinated for this procedure to be completed. The ROC Point of Contact (POC) may ask that only specific circuits be relocated on one or more dates to facilitate the rollout of OPUP equipment. The ROC POC should supply contact information for each remote end user corresponding to the RPG circuit(s) being relocated.

Purpose:

The purpose of this procedure is to relocate one or more DOD OPUP dedicated lines on the TB2 (2-RJ2DX) dedicated RPG punch block to the TB4 (4-RJ2DX) block. The dedicated circuits will be verified as working before and after relocation.

NOTE

> This procedure assumes remote end circuits for stand-alone USAF OPUPs terminate at the Base Weather Station (BWS) and have not been relocated to a Base Network Control Center (BNCC).

Procedure/Steps:

1. Reference the Current TCR, Modification Note 72 TCR, and Figure 3-1. to identify the corresponding 4-wire positions on the dedicated punch blocks for each dedicated circuit that will be relocated. Mark, as necessary, directly on Figure 3-1. the circuits to be relocated, as the circuits will all be relocated from TB2 to TB4.

2. Verify the connection status of the corresponding X.25 line numbers on the RPG HCI Product Distribution Comms Status (PDCS) window. To open, click on the PDCS box in the RPG HCI window. Verify the corresponding line numbers of all circuits that will be relocated are in a CONNECT status. For FAA Redundant, verify the connection achieves CONNECT status on both channels.

ATTACHMENT 3 (Continued)

RELOCATE SPECIFIC DOD OPUP DEDICATED USER CIRCUITS

RPG TB2
(2-RJ2DX)

RPG TB4
(4-RJ2DX)

4-Wire Ckt #1
01
02 PDCS Line 9
03 Modem Slot 5
04 (DOD/FAA Only)
(NWS - Not Used)

#2
05
06 PDSC Line 10
07 Modem Slot 6
08

#3
09
10 PDSC Line 11
11 Modem Slot 7
12

#4
13
14 PDSC Line 12
15 Modem Slot 8
16

#5
17
18 PDSC Line 13
19 Modem Slot 9
20

#6
21
22 PDSC Line 14
23 Modem Slot 10
24

#7
25
26 PDSC Line 15
27 Modem Slot 11
28

#8
29
30 PDSC Line 16
31 Modem Slot 12
32

#9
33
34 PDSC Line 17
35 Modem Slot 13
36

#10
37
38 PDSC Line 18
39 Modem Slot 14
40

#11
41
42 PDSC Line 19
43 Modem Slot 15
44

#12
45
46 PDSC Line 20
47 Modems Slot 16
48

4-Wire Ckt #1
01
02 PDCS Line 33
03 Modem Slot 17
04

#2
05
06 PDSC Line 34
07 Modem Slot 18
08

#3
09
10 PDSC Line 35
11 Modem Slot 19
12

#4
13
14 PDSC Line 36
15 Modem Slot 20
16

#5
17
18 (PDSC Line 37-NWS)
19 (Distant MSCF
FAA/DOD Only)
20 Modem Slot 21

#6
21
22
23
24

#7
25
26
27
28

#8
29
30
31
32

#9
33
34
35
36

#10
37
38
39
40

#11
41
42
43
44

#12
45
46
47
48

Figure 3-1. Quick Reference Map from RPG HCI PDCS to Modem Chassis to Dedicated Blocks

ATTACHMENT 3 (Continued)

RELOCATE SPECIFIC DOD OPUP DEDICATED USER CIRCUITS

3. Do not proceed until the dedicated circuit(s) to be relocated are all in working order (on both channels for FAA redundant) and the remote end user's OPUP upgrade is being performed. ROC personnel and/or the remote end user should contact your site to notify you that they are ready for the installation of Modification Notes 65 and 72 on the RPG. Modification Note 65 will already have been completed for most RPGs.

4. Remove the COHP-150 surge suppressors for the circuit to be relocated. If this is an NWS RPG, which has an extended RPG demarc, then remove the surge suppressors from the corresponding extended dedicated block instead of the NEXRAD block.

5. Before disconnecting the 4-wire circuit, note the color pattern (e.g. white/blue, blue/white, white/orange, and orange/white) used for the circuit to be relocated. It is important to record the specific color pattern sequence, so this sequence can be duplicated when the circuit is punched in its new location. Remove the 4-wire dedicated circuit from the telco side of the NEXRAD RPG dedicated block (2-RJ2DX or TB2). Punch the circuit at its new location on 4-RJ2DX (or TB4) using an impact punch tool (Jensen 23-814 or equivalent), and re-install the COHP-150 surge suppressors at the new location.

6. After the RPG circuit relocation, coordinate with the remote end user's POC to verify whether the OPUP TCP/IP/PPP upgrade is completed or if the remote end PPP modem has at least been connected.

7. For the modem corresponding to the relocated circuit, verify that the Modem LCD reads `V32b 14.4 T/D`? and the TR light is lit solid. The RD and TD lights will flicker as data is transmitted. If the modem is not physically connected to a far end modem (no CD light), the TR light should be lit solid. If the modem is physically connected to a far end modem, but there is no software application connection, the TR light will be cycling (approximate 30 to 45 second cycles). A summary table of the RPG modem lights and their meanings is given below.

Summary Table of RPG Modem Lights	
RPG Modem Lights(s)	**Status**
CD OFF	No physical connection to OPUP modem
CD ON	Good physical connection to OPUP modem
TR ON	RPG software/router communicating to RPG modem
CD ON / TR Cycling	No logical connection to OPUP software/router
CD ON / TR ON TD AND RD FLICKERING	Good physical and logical connection to OPUP. OPUP and RPG software are communicating.

ATTACHMENT 3 (Continued)

RELOCATE SPECIFIC DOD OPUP DEDICATED USER CIRCUITS

8. If the modems do not connect, verify the RPG modem's TX Level was properly adjusted (ATTACHMENT 2 step 4) and have the remote end check their transmit level. If the original transmit levels do not appear to work, work with the remote end used and adjust the transmit levels for both modems using the AM-48 transmission test set and EHB 6-525, Revision 1, dated 30 April 2003, paragraph 6-6.16, step 58. If still not connected, verify the RPG modem has been configured for the PPP option set in accordance with Modification Note 65, Attachment 6 (or EHB 6-525, Revision 1, Dated 30 April 2003, paragraph 6-6.16).   This same setup procedure also applies to the OPUP modem, except the MODULATION OPT'S mode setting should be Originate on the OPUP modem end.

9. Once the OPUP has been installed, the RPG circuit has been relocated, and the 4-wire circuit is working end to end, verify the connection status of the corresponding new line number (33 through 36 and 37 for NWS only) on the RPG HCI Product Distribution Comms Status (PDCS) window. To open, click on either the Narrowband Link or the PDCS Box in the RPG HCI window. Verify that the corresponding line numbers of all circuits that will be relocated are in a CONNECT status. For FAA Redundant, verify that the connection achieves CONNECT status on both channels.

10. Note that the values in the ID and User Name columns will not be the same as they were before the OPUP upgrade and relocation. OPUP IDs are typically in the range of 800 through 900. Notify the Hotline (1-800-643-3363) if a user connects without a name in step 9. Also notify the Hotline if the User ID is showing a Ø (zero). Verify the names are in the correct order as shown on the Modification Note 72 TCR. If not, verify the correct punch down sequence was followed on the TB4 punch block.

11. Repeat steps 3 through 10 for each 4-wire dedicated circuit to be relocated.

ATTACHMENT 4

INSTALL NEW DOD DEDICATED CIRCUITS AND ADJUST CORRESPONDING MODEM TX LEVEL

Tools/Materials Required:

> Transmission Line Test Set AM-48 (SERD 15)
> Eight Wire Modular Adapter Harris 10220-100 or equivalent
> Impact Punch Tool, Jensen 23-814 or equivalent
> Impact Punch Tool 66 Blade, Jensen 23-066 or equivalent
> Modification Note 72 TCR obtained per ATTACHMENT 1 and marked per
> ATTACHMENT 2

Initial Conditions:

- All RPGPCA components installed, equipment powered on
- RPG operational with Software Build 4.0 or later
- Technician is logged into the RPG workstation as a user and RPG HCI is running
- RPG is clear of RPG alarms
- All Sites: Completed ATTACHMENT 2
- WSR-88D Hotline or the ROC OPUP deployment manager has coordinated an exact date with your site for this procedure to be completed. The ROC will provide contact information for the remote end OPUP maintainer to work with on the circuit checkout.

Purpose:

The purpose of this procedure is to install one or more 4-wire dedicated circuit on the TB4 dedicated RPG punch block corresponding to new OPUP end users.

Procedure/Steps:

1. Compare the current and Modification Note 72 TCRs to identify new OPUP connections. The following table provides a list of specific RPGs and possible new OPUP connections.

NOTE

> The table contains the most current OPUP requirements
> information as of the date of this publication. DOD may or may not
> order all of the circuits identified. If a new user is identified for your
> site in this table and on the Modification Note 72 TCR, but the telco
> service has not been delivered or cannot be identified, please
> notify the WSR-88D Hotline (800-643-3363) to assist you in
> obtaining this information or update your TCR for Modification Note
> 72 accordingly, if the circuit will not be ordered by DoD.

ATTACHMENT 4 (Continued)

INSTALL NEW DOD DEDICATED CIRCUITS AND ADJUST CORRESPONDING MODEM TX LEVEL

Summary Table of New DoD OPUP Connections			
Site Name	**Radar 4 Letter ID**	**Possible New OPUP Connection**	**DoD Agency**
ANDERSEN AFB	PGUA	HICKAM 17 OWS OPUP	AFWA
BETHEL (RPG 1)	PABC	ELMENDORF 11 OWS OPUP	AFWA
BETHEL (RPG 2)	PABC	ELMENDORF 11 OWS OPUP	AFWA
CHARLESTON, SC	KCLX	SPAWAR CHARLESTON SC	USN
DENVER	KFTG	DAVIS-MONTHAN 25 OWS OPUP	AFWA
DOVER AFB	KDOX	NAS PATUXENT RIVER OPUP 2	USN
FAIRBANKS (RPG 1)	PAPD	ELMENDORF 11 OWS OPUP	AFWA
FAIRBANKS (RPG 2)	PAPD	ELMENDORF 11 OWS OPUP	AFWA
KAMUELA/KOHALA APT (RPG 1)	PHKM	HICKAM 17 OWS OPUP	AFWA
KAMUELA/KOHALA APT (RPG 2)	PHKM	HICKAM 17 OWS OPUP	AFWA
KING SALMON (RPG 1)	PAKC	ELMENDORF 11 OWS OPUP	AFWA
KING SALMON (RPG 2)	PAKC	ELMENDORF 11 OWS OPUP	AFWA
MIDDLETON ISLAND (RPG 1)	PAIH	ELMENDORF 11 OWS OPUP	AFWA
MIDDLETON ISLAND (RPG 2)	PAIH	ELMENDORF 11 OWS OPUP	AFWA
NOME (RPG 1)	PAEC	ELMENDORF 11 OWS OPUP	AFWA

ATTACHMENT 4 (Continued)

INSTALL NEW DOD DEDICATED CIRCUITS AND ADJUST CORRESPONDING MODEM TX LEVEL

Summary Table of New DoD OPUP Connections			
Site Name	**Radar 4 Letter ID**	**Possible New OPUP Connection**	**DoD Agency**
NOME (RPG 2)	PAEC	ELMENDORF 11 OWS OPUP	AFWA
NORFOLK	AKQ	NAS PAXTUXENT RIVER OPUP 2	AFWA
SITKA (RPG 1)	PACG	ELMENDORF 11 OWS OPUP	AFWA
SITKA (RPG 2)	PACG	ELMENDORF 11 OWS OPUP	AFWA
SOUTH KAUAI (RPG 1)	PHKI	HICKAM 17 OWS OPUP	AFWA
SOUTH KAUAI (RPG 2)	PHKI	HICKAM 17 OWS OPUP	AFWA
SOUTH SHORE (RPG 1)	PHWA	HICKAM 17 OWS OPUP	AFWA
SOUTH SHORE (RPG 2)	PHWA	HICKAM 17 OWS OPUP	AFWA
Table Notes: 1. ELMENDORF 11 OWS OPUP is not considered a new connection for ANCHORAGE, because this OPUP replaces the legacy PUP at the Elmendorf AFB BWS. 2. HICKAM 17 OWS OPUP is not considered a new connection for MOLOKAI, because this OPUP replaces the legacy PUP at the Hickam AFB BWS.			

ATTACHMENT 4 (Continued)

INSTALL NEW DOD DEDICATED CIRCUITS AND ADJUST CORRESPONDING MODEM TX LEVEL

2. Install the new 4-wire dedicated circuit on the telco side of the NEXRAD RPG dedicated block. Punch the circuit at its new location on 4-RJ2DX (or TB4) per Figure 4-1. using an impact punch tool (Jensen 23-814 or equivalent). If this is an NWS RPG, which has an extended RPG demarc, install the dedicated circuit on the telco side of the extended dedicated demarc block.
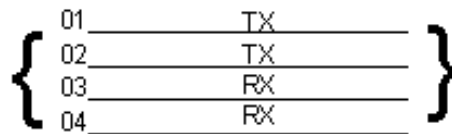

Figure 4-1. Four-Wire Circuit Order

3. Install two COPH-150 surge suppressors at the new circuit location.

4. After the RPG circuit installation, coordinate with the remote OPUP maintainer to verify whether the OPUP TCP/IP/PPP upgrade is complete or if the remote end PPP modem has been connected.

5. For the modem corresponding to the relocated circuit, verify that the Modem LCD reads `V32b 14.4 T/D?` and the TR light is lit solid. The RD and TD lights will flicker as data is transmitted. If the modem is not physically connected to a far end modem (no CD light), the TR light should be lit solid. If the modem is physically connected to a far end modem, but there is no software application connection, the TR light will be cycling (approximate 30 to 45 second cycles). A summary table of the RPG modem lights and their meanings is given below.

Summary Table of RPG Modem Lights	
RPG Modem Lights(s)	**Status**
CD OFF	No physical connection to OPUP modem
CD ON	Good physical connection to OPUP modem
TR ON	RPG software/router communicating to RPG modem
CD ON / TR Cycling	No logical connection to OPUP software/router
CD ON / TR ONTD AND RD FLICKERING	Good physical and logical connection to OPUP. OPUP and RPG software are communicating.

ATTACHMENT 4 (Continued)

INSTALL NEW DOD DEDICATED CIRCUITS AND ADJUST CORRESPONDING MODEM TX LEVEL

6. Work with the remote end user to properly adjust the TX levels for the RPG modem (both channels for FAA redundant) and have the remote end optimize their transmit level using the AM-48 transmission test set per EHB 6-525, Revision 1, Dated 30 April 2003, paragraph 6-6.16, step 58.

7. If still not connected, verify the RPG modem has been configured for the PPP option set in accordance with Modification Note 65, Attachment 6 (or EHB 6-525, Revision 1, Dated 30 April 2003, paragraph 6-6.16).   This same setup procedure also applies to the OPUP modem, except the MODULATION OPT'S mode setting should be Originate on the OPUP modem end. For FAA redundant, verify modem setup on both RPG channels.

8. Verify that the modem shows a physical connection to a far end modem, e.g. `Data 14.4` or `V34 33.6` is shown on the modem LCD. For FAA redundant, verify on both channels.

9. Once the circuit is working end to end, verify the connection status of the corresponding new line number (33 through 36 and 37 for NWS only) on the RPG HCI Product Distribution Comms Status (PDCS) window. To open, click on either the Narrowband Link or the PDCS box in the RPG HCI window. Verify that the corresponding line numbers of all new circuits are in a CONNECT status. For FAA Redundant, verify that the connection achieves CONNECT status on both channels.

10. Note that the values in the ID and User Name columns. OPUP IDs are typically in the range of 800 - 900. Notify the Hotline (1-800-643-3363) if a user connects without a name. Also notify the Hotline if the User ID is showing a Ø (zero). Verify the names are in the correct position as shown on the Modification Note 72 TCR. If not, verify the correct punch down sequence was followed on the TB4 punch block.

11. Repeat steps 2 through 10 for each new OPUP connection.

ATTACHMENT 5

EFFECTIVITY

NWS

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
	Eastern Region			
CHARLESTON, SC	CHARLESTON, SC	RPG	CHS	WN9208
CINCINNATI	WILMINGTON, OH	RPG	ILN	WN9710
COLUMBIA	WEST COLUMBIA, SC	RPG	CAE	WN9310
MOREHEAD CITY	NEWPORT, NC	RPG	MHX	WN9307
NORFOLK	WAKEFIELD, VA	RPG	AKQ	WN9952
PHILADELPHIA	MOUNT HOLLY, NJ	RPG	PHI	WN9950
PORTLAND, ME	GRAY, ME	RPG	GYX	WN9938
RALEIGH/DURHAM	RALEIGH, NC	RPG	RAH	WN9306
STERLING	STERLING, VA	RPG	LWX	WN9931
	Southern Region			
ALBUQUERQUE	ALBUQUERQUE, NM	RPG	ABQ	WP9365
ATLANTA	PEACHTREE CITY, GA	RPG	FFC	WP9219
AUSTIN/SAN ANTONIO	NEW BRAUNFELS, TX	RPG	EWX	WP9253

ATTACHMENT 5 (Continued)

EFFECTIVITY

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
BRANDON, MS	JACKSON, MS	RPG	JAN	WP9235
CORPUS CHRISTI	CORPUS CHRISTI, TX	RPG	CRP	WP9251
DALLAS/FT WORTH	FORT WORTH, TX	RPG	FWD	WP9259
EL PASO	SANTA TERESA, NM	RPG	EPZ	WP9270
JACKSONVILLE	JACKSONVILLE, FL	RPG	JAX	WP9206
KEY WEST	BOCA CHICA KEY, FL	RPG	BYX	WP9201
LITTLE ROCK	NORTH LITTLE ROCK, AR	RPG	LZK	WP9340
MELBOURNE	MELBOURNE, FL	RPG	MLB	WP9204
MIAMI	MIAMI, FL	RPG	MFL	WP9918
MOBILE	MOBILE, AL	RPG	MOB	WP9223
NORMAN	NORMAN, OK	RPG	OUN	WP9921
SHREVEPORT	SHREVEPORT, LA	RPG	SHV	WP9248
SLIDELL	SLIDELL, LA	RPG	LIX	WP9919
TAMPA	RUSKIN, FL	RPG	TBW	WP9961
	Central Region			
CHEYENNE	CHEYENNE, WY	RPG	CYS	WR9564
DENVER	BOULDER, CO	RPG	BOU	WR9469

E2

ATTACHMENT 5 (Continued)

EFFECTIVITY

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
DETROIT	WHITE LAKE, MI	RPG	DTX	WR9954
FARGO/GRAND FORKS	GRAND FORKS, ND	RPG	FGF	WR9750
LOUISVILLE	LOUISVILLE, KY	RPG	LMK	WR9423
NORTHERN INDIANA	NORTH WEBSTER, IN	RPG	IWX	WR9534
OMAHA	VALLEY, NE	RPG	OAX	WR9553
PLEASANT HILL	PLEASANT HILL, MO	RPG	EAX	WR9446
PUEBLO	PUEBLO, CO	RPG	PUB	WR9464
RAPID CITY	RAPID CITY, SD	RPG	UNR	WR9662
ST LOUIS	WELDON SPRING, MO	RPG	LSX	WR9971
WICHITA	WICHITA, KS	RPG	ICT	WR9450
Western Region				
BOISE	BOISE, ID	RPG	BOI	WT9681
SALT LAKE CITY	SALT LAKE CITY, UT	RPG	SLC	WT9932
GREAT FALLS	GREAT FALLS, MT	RPG	TFX	WT9950
LAS VEGAS	LAS VEGAS, NV	RPG	VEF	WT9386
LOS ANGELES	OXNARD, CA	RPG	LOX	WT9295
PORTLAND, OR	PORTLAND, OR	RPG	PQR	WT9698

E3

ATTACHMENT 5 (Continued)

EFFECTIVITY

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
RENO	RENO, NV	RPG	REV	WT9488
SACRAMENTO	SACRAMENTO, CA	RPG	STO	WT9914
SAN JOAQUIN VALY	HANFORD, CA	RPG	HNX	WT9389
SAN DIEGO	SAN DIEGO, CA	RPG	SGX	WT9918
SEATTLE	SEATTLE, WA	RPG	SEW	WT9922
SPOKANE	SPOKANE, WA	RPG	OTX	WT9785
TUCSON	TUCSON, AZ	RPG	TWC	WT9274
PHOENIX	PHOENIX, AZ	RPG	PSR	WT9278
YUMA	PHOENIX, AZ	RPG	PSR	WT9278
DoD				
ALTUS AFB	FREDERICK, OK	RPG	FDR	FE4419
ANDERSEN AFB	ANDERSEN AFB, GU	RPG	UAM	FE5240
BEALE AFB	OROVILLE, CA	RPG	BBX	FE4686
CAMP HUMPHREYS	CAMP HUMPHREYS, KO	RPG	KSGR4	FI5294
CANNON AFB	FIELD, NM	RPG	FDX	FE4855
COLUMBUS AFB	GREENWOOD SPRINGS, MS	RPG	GWX	FE3022
DOVER AFB	ELLENDALE STATE FOREST, DE	RPG	DOX	FE4497

ATTACHMENT 5 (Continued)

EFFECTIVITY

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
DYESS AFB	MORAN, TX	RPG	DYX	FE4661
EDWARDS AFB	BORON, CA	RPG	EYX	FE2805
EGLIN AFB	RED BAY, FL	RPG	EVX	FE2823
FT CAMPBELL	TRENTON, KY	RPG	HPX	FY4812
FT DRUM	MONTAGUE, NY	RPG	TYX	FY4846
FT HOOD	GRANGER, TX	RPG	GRK	FY4824
FT POLK	FT POLK, LA	RPG	POE	FY4825
FT RUCKER	ECHO, AL	RPG	EOX	FY4805
HOLLOMAN AFB	RUIDOSO, NM	RPG	HDX	FE4801
KADENA AB	KADENA AB, JA	RPG	ODNR5	FH5270
KUNSAN AB	KUNSAN AB, KO	RPG	KJKR4	FH5284
LAJES AB	SANTA BARBARA, AZR	RPG	PLAL3	FE4486
LAUGHLIN AFB	BRACKETVILLE, TX	RPG	DFX	FE3099
MAXWELL AFB	CARRVILLE, AL	RPG	MXX	FE3300
MINOT AFB	DEERING, ND	RPG	MBX	FE4528
MOODY AFB	SOUTH STOCKTON, GA	RPG	VAX	FE4830
ROBINS AFB	JEFFERSONVILLE, GA	RPG	JGX	FE2067
VANCE AFB	CHEROKEE, OK	RPG	VNX	FE3029

ATTACHMENT 5 (Continued)

EFFECTIVITY

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
VANDENBERG AFB	ORCUTT, CA	RPG	VBX	FE4610

FAA

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
ANCHORAGE FAA (RPG 2)	KENAI, AK	RPG	AHG	6901AJ
ANCHORAGE FAA (RPG 1)	KENAI, AK	RPG	AHG	6901AJ
BETHEL FAA (RPG 2)	BETHEL, AK	RPG	ABC	690112
BETHEL FAA (RPG 1)	BETHEL, AK	RPG	ABC	690112
FAIRBANKS FAA (RPG 2)	FAIRBANKS, AK	RPG	APD	690178
FAIRBANKS FAA (RPG 1)	FAIRBANKS, AK	RPG	APD	690178
KAMUELA/KOHALA APT(RPG 2)	KAMUELA, HI	RPG	HKM	699235
KAMUELA/KOHALA APT(RPG 1)	KAMUELA, HI	RPG	HKM	699235
KING SALMON FAA (RPG 2)	KING SALMON, AK	RPG	AKC	690137
KING SALMON FAA (RPG 1)	KING SALMON, AK	RPG	AKC	690137
MIDDLETON ISLAND (RPG 2)	MIDDLETON ISLAND, AK	RPG	AIH	690140
MIDDLETON ISLAND (RPG 1)	MIDDLETON ISLAND, AK	RPG	AIH	690140
MOLOKAI FAA (RPG 2)	MOLOKAI, HI	RPG	HMO	699213
MOLOKAI FAA (RPG 1)	MOLOKAI, HI	RPG	HMO	699213
NOME FAA (RPG 2)	NOME, AK	RPG	AEC	690147

ATTACHMENT 5 (Continued)

EFFECTIVITY

NEXRAD Site Name	City, ST	EQP	SID	ORG Code
NOME FAA (RPG 1)	NOME, AK	RPG	AEC	690147
SAN JUAN FAA (RPG 2)	SAN JUAN, PR	RPG	JUA	69F362
SAN JUAN FAA (RPG 1)	SAN JUAN, PR	RPG	JUA	69F362
SITKA FAA (RPG 2)	BIORKA ISLAND, AK	RPG	ACG	690141
SITKA FAA (RPG 1)	BIORKA ISLAND, AK	RPG	ACG	690141
SOUTH KAUAI FAA (RPG 2)	SOUTH KAUAI, HI	RPG	HKI	699211
SOUTH KAUAI FAA (RPG 1)	SOUTH KAUAI, HI	RPG	HKI	699211
SOUTH SHORE FAA (RPG 2)	NAALEHU, HI	RPG	HWA	699201
SOUTH SHORE FAA (RPG 1)	NAALEHU, HI	RPG	HWA	699201

ATTACHMENT 6

DOD DIAL CIRCUIT RELOCATION ON THE RPG COMPLETION FORM

******** DoD Only will complete and return this form ********
NWS report completion through EMRS

Site Name: _____

Site Identifier: _____

Total Time to Complete this Modification Document: _____

Technician's Name(s): _____

Technician's Phone Number: _____

Date Completed: _____

Equipment Modifed (SID) RPG _____   _____

Problem(s) Encountered:
_____

_____

_____

Upon completion of this form, return the information to the ROC using one of the four methods below:

    1. Mailing Address: Program Branch, Retrofit Management Team
                           WSR-88D Radar Operations Center
                           3200 Marshall Ave., Suite 101
                           Norman, OK 73072-8028

    2. FAX Number: (405) 366-6553
                           ATTN: Retrofit Management Team

    3. E-mail Address: NEXRAD.Logistics@noaa.gov

    4. Web Version: http://www.roc.noaa.gov/ssb/logistics/complete/

ATTACHMENT 7 - SAMPLE EMRS REPORT

A26 Detail Form - ESCM2, SILVER SPRING, MD :: EMRS ANALYST - Microsoft Internet Explorer

GENERAL INFORMATION

NEW RECORD   WFO* DTX   Document No.* DTX30829000

1. Open Date	Open Time	2. Op Initials	3. Response Priority	4. Close Date	Close Time
08/29/2003	08:00	WSH	○ Immediate ○ Low ○ Routine ⦿ Not Applicable	08/29/2003	09:00

5. Maintenance Description   439   characters left   RADAR, WSR-88D

DoD Dedicated Circuit Relocations and New Installs on the RPG

EQUIPMENT INFORMATION

6. Station ID*	7. Equipment Code	8. Serial Number	9. TM	10. AT	11. How Mal
DTX	RPG	DC015	M	M	999

Alert: **Time Remaining:**   0:00
(For Block 12 use only)

12. EQUIPMENT OPERATIONAL STATUS TIMES

a. Fully Operational		Partially Operational				Not Operational			
		b. Logistic Delay		c. All Other		d. Logistic Delay		e. All Other	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
				1					

13. PARTS USAGE and CONFIGURATION MANAGEMENT REPORTING

ASN	Vendor Part No. (New Part)	Serial Number (Old Part)	Serial Number (New Part)	
				New Row
				Delete Row

14. WORKLOAD INFORMATION

a. Routine		b. Non-Routine		c. Travel		d. Misc		e. Overtime	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
						1	00		

MISCELLANEOUS INFORMATION

15. Maintenance Comments   644   characters left

Relocate specific DoD dedicated telecommunications circuits and install new ones, I.A.W NEXRAD Mod Note 72

16. Tech Initials JPL

17. SPECIAL PURPOSE REPORTING INFORMATION

a. Mod No.	b. Mod Act/Deact Date	c. Block C	d. Trouble Ticket No.	e. Block E
72	08/29/2003			

Commit A26   Place on Hold   Copy A26   New A26   Cancel

Done   Internet